

**Cheyenne Light, Fuel and Power Company*****Advanced Metering Infrastructure/Meter Data Management System*****Abstract**

Cheyenne Light, Fuel and Power Company (CLFP) is one of three Black Hills Corporation subsidiaries deploying advanced metering infrastructure (AMI)—the other two are Black Hills/Colorado Electric (BHCOE) and Black Hills Power, Inc. (South Dakota/Wyoming). CLFP's project includes the deployment of smart meters, communications infrastructure, and a meter data management system (MDMS). The project provides improved outage restoration from the integration of an outage management system with the AMI. Two-way communication allows for off-cycle reads, tamper detection, potential remote connect/disconnect of customer loads and potential future implementation of time-based rate programs.

**Smart Grid Features**

**Communications infrastructure** consists of a wireless mesh network connecting smart meters and strategically placed data collectors that use wireless backhaul solutions. The data collectors relay the smart meter information to the head end system. The two-way communication provides for greater operational functionality and the future addition of new electricity service options.

**Advanced metering infrastructure** includes the system-wide deployment of approximately 39,102 smart meters. Operational cost savings are derived from the automation of meter reading and customer services activities. New AMI features include outage and restoration notification so that CLFP can respond to outages and customer requests more efficiently. The AMI system is being integrated with a meter data management system to support collection, analysis, and archiving of data for potential time-based rates, distribution system upgrades, reliability planning initiatives, customer Web presentation applications, and power quality enhancements.

**At-A-Glance**

**Recipient:** Cheyenne Light, Fuel and Power Co.

**State:** Wyoming

**NERC Region:** Western Electricity Coordinating Council

**Total Budget:** \$10,066,882

**Federal Share:** \$5,033,441

**Project Type:** Advanced Metering Infrastructure

**Equipment**

- 39,102 Smart Meters
- AMI Communication Systems
- Meter Data Management System

**Targeted Benefits**

- Reduced Meter Reading Costs
- Improved Electric Service Reliability
- Reduced Ancillary Service Cost
- Reduced Truck Fleet Fuel Usage
- Reduced Greenhouse Gas and Criteria Pollutant Emissions

**Timeline**

Key Milestones	Target Dates
AMI asset deployment begins	Q2 2010
AMI asset deployment ends	Q4 2010
MDMS integration begins	Q2 2009
MDMS integration ends	Q2 2012

**Cheyenne Light, Fuel and Power Company** *(continued)*

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